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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------|------------------|
| 10/801,651 | 03/17/2004 | Jeong-Hwan Yang | SEC.1148 | 1694 |
| 20987 | 7590 | 01/09/2006 | EXAMINER | |
| VOLENTINE FRANCO, & WHITT PLLC ONE FREEDOM SQUARE 11951 FREEDOM DRIVE SUITE 1260 RESTON, VA 20190 | | | LINDSAY JR, WALTER LEE | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2812 | |

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---|---|--|
| Office Action Summary | Application No. 10/801,651 | Applicant(s) YANG, JEONG-HWAN | |
| | Examiner Walter L. Lindsay, Jr. | Art Unit 2812 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-12, 14 and 16-31 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 10-12, 14, 16, 18, 19 and 26-31 is/are rejected.
- 7) ☒ Claim(s) 17 and 20-25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

This Office Action is in response to an Amendment filed 10/26/2005.

Currently, claims 10-12, 14 and 16-31 are pending.

Specification

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 10-12, 14, 16, 18, 19 and 26-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Sugiyama et al. (U.S. Patent No. 6,774,390 filed 2/21/2003).

Sugiyama shows the method as claimed in Figs.2-31 and corresponding text as: the channel (30, 40) comprises an inner portion (30) and an outer portion (40) (col. 6, line 63- col. 7, line 7)); the outer portion surrounds the inner portion (col. 6, line 63-col. 7, line 7); the inner portion and the outer portion have different lattice properties (col. 6, line 63-col. 7, line 7); and a gate (80) formed over the channel, wherein the gate surrounds at least a section of the channel on at least three sides (col. 7, lines 8-21)

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(claim 10). Sugiyama teaches that the inner portion comprises silicon-germanium and the outer portion comprises silicon (col. 6, line 63-col. 7, line 7)(claim 11). Sugiyama teaches that the outer portion surrounds the inner portion on at least three sides (col. 7, lines 8-21) (claim 12). Sugiyama teaches that the gate is substantially perpendicular to the channel (col. 7, lines 8-21) (claim 14). Sugiyama teaches that a gate oxide (70) is formed between the channel and the gate (col. 7, lines 8-21) (claim 16). Sugiyama teaches that the thickness of the inner portion is between 10nm and 90 nm (col. 9, lines 30-43) (claim 18). Sugiyama teaches that the thickness of the inner portion is between 10 nm and 100 nm (col. 9, lines 44-50).

Sugiyama shows the method as claimed in Figs. 5-14 and corresponding text as: a substrate (41); a channel having an inner portion and an outer portion formed on the substrate, wherein the inner portion and the outer portion have different lattice properties (col. 6, line 63-col. 7, line 21); and a gate formed over the channel, and wherein the gate surrounds at least a section of the channel on at least three sides (col. 7, lines 8-21) (claim 26). Sugiyama teaches that a gate oxide (70) is formed between the channel and the gate (col. 7, lines 8-21) (claim 27). Sugiyama teaches that the gate is substantially perpendicular to the channel (col. 7, lines 8-21) (claim 28).

Sugiyama shows the method as claimed in Figs. 5-14 and corresponding text as: a substrate (41); a channel having an inner portion and an outer portion formed on the substrate, wherein the inner portion and the outer portion have different lattice properties (col. 6, line 63-col. 7, line 21); a gate formed over the channel, and wherein the gate surrounds at least a section of the channel on at least three sides; and a

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source region and a drain region coupled to the channel (col. 7, lines 8-21) (claim 29).

Sugiyama teaches that a gate oxide (70) is formed between the channel and the gate (col. 7, lines 8-21) (claim 30). Sugiyama teaches that the gate is substantially perpendicular to the channel (col. 7, lines 8-21) (claim 31).

Allowable Subject Matter

4. Claims 17 and 20-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

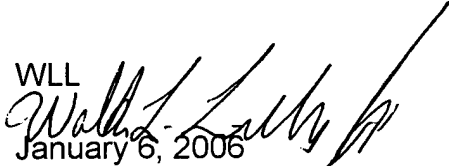
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter L. Lindsay, Jr. whose telephone number is (571) 272-1674. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter L. Lindsay, Jr.
Examiner
Art Unit 2812

WLL

January 6, 2006